

**Notes on the Phycini of southern Africa with the description
of a new genus and two new species
(Diptera: Therevidae: Phycinae)**

by

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ABSTRACT

The genera of Phycini occurring in southern Africa are reviewed. A group consisting of *Phycus* Walker, 1850 and *Stenogephyra* gen. n. is suggested. The five species of *Phycus* occurring in southern Africa are keyed and reviewed. *Stenogephyra torrida* sp. n. (from the north-western Cape Province and Namibia) and *S. minuta* sp. n. (from the southern Cape Province) are described.

INTRODUCTION

Seven genera of Afrotropical Phycini were listed by Lyneborg (1980a). In my introductory remarks to the family Therevidae I stressed that the tribe Phycini was totally unrevised; this section being in strong contrast to the rest of the family where modern revisions (Lyneborg 1972, 1976) were available.

The genera of Phycini listed in the Catalogue were: *Actorthia* Kröber, 1912; *Lesneus* Surcouf, 1921; *Neotabuda* Kröber, 1931; *Orthactia* Kröber, 1912; *Pachygenia* Kröber, 1912 (invalid name); *Phycus* Walker, 1850; and *Ruppellia* Wiedemann, 1830. The present status of these is as follows:

Actorthia is a genus of the southern Palaearctic Region and the northern Afrotropical Region (Lyneborg 1983). It is not represented in southern Africa.

Lesneus was placed in synonymy with *Actorthia* by Lyneborg (1983), who also gave a redescription of the genus and listed the known species.

Neotabuda was revised by Lyneborg (1980b). Twenty species, all occurring in southern Africa, are recognised. Additional undescribed species are at hand in recently collected material belonging to the Natal Museum.

Orthactia is also confined to southern Africa. It contains several species, only one of which is described. A revision is in preparation.

Pachygenia was placed in synonymy with *Neotabuda* by Lyneborg (1980b).

Phycus was revised by Lyneborg (1978). Thirteen Afrotropical species were recognised, five of which occur in southern Africa. They are reviewed below.

Ruppellia is a genus of the southern Palaearctic Region and the northern Afrotropical Region, but also has one representative (*basalis* Loew) in Namibia, and two undescribed species are at hand from Madagascar. These are the only Phycini so far known from this island.

In addition to these five genera, of which four have representatives in southern Africa, Lyneborg (1983) described *Acathrito* with *A. lindneri* Lyneborg from

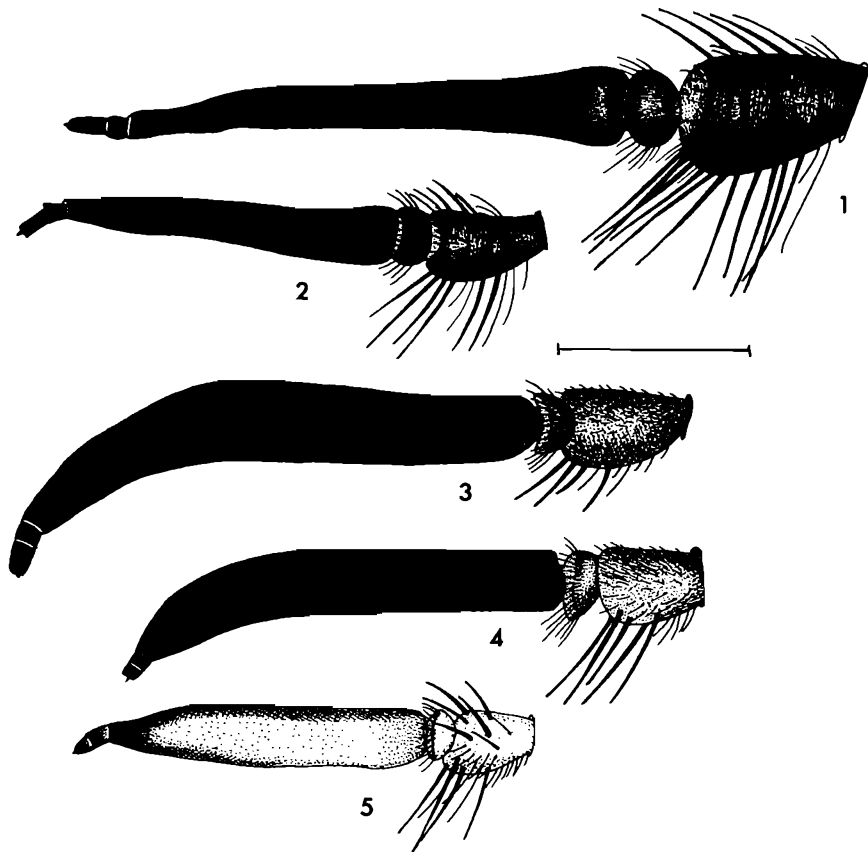
Kenya and Tanzania as the type species. This genus also contains undescribed species from Natal and Angola.

A new genus *Stenogephyra* gen. n., with two species from southern Africa, is described in this paper.

TAXONOMY

Phycine therevids are defined as follows: dorsal surface of vein R_1 with fine setulae; hind femur with an erect pile of normal hairs; T10 of ♀ weakly spinose, the spines all uniform.

A group formed by *Phycus* Walker and *Stenogephyra* gen. n. is characterised as follows: eyes separated in both sexes; first flagellomere elongated (Figs 1–5, 8–9, 22); palpus two-segmented; femora without setae; tibial setae very short; S10 and hypoproct of ♂ fused, forming a complete 'ventral epandrial sclerite' (Fig. 12); hypandrium vestigial or absent.



Figs 1–5. Antennae of *Phycus* species of southern Africa. 1. *kroeberi* (Brauns). 2. *niger* (Kröber). 3. *mirabilis* Lyneborg. 4. *flavus* Lyneborg. 5. *fulvus* Lyneborg. Scale: 0,5 mm.

Genus *Phycus* Walker

Phycus Walker, 1850:2. Type species: *Xylophagus canescens* Walker, 1848 (= *Xylophagus brunneus* Wiedemann, 1824), original monotypy.

For full synonymy: see Lyneborg (1978: 212, 1983: 185).

Diagnosis

Medium-sized to large, blackish or rarely yellowish, slender-bodied species. Eyes separated in both sexes, frons being wider in ♀ than in ♂. Frontal pattern composed of shining black and greyish tomentose areas. Face and gena free of pile. Scape and first flagellomere varying greatly in proportions among species (Figs 1–5), but in the species of southern Africa scape is shorter than $\frac{1}{3}$ of first flagellomere and provided with strong setae ventrally, sometimes also dorsally. Flagellar style apical, two-segmented, with a minute spine apically. Palpus two-segmented, apical segment shorter than basal segment. Only 1, 2 (or 3) notopleural setae. One pair of scutellar setae. Ambient vein continuing to A_1 . Prosternum and posterior surface of mid coxa without pile. All femora without setae. Tibiae with very short setae.

♂: epandrium simple; ventral epandrial sclerite complete and well sclerotised, as long as epandrium. Gonocoxites not fused ventrally; hypandrium vestigial or absent. Ventral lobe of gonocoxite absent. Aedeagus with strong dorsal bridge to dorsal edge of gonocoxite.

♀: two small vestiges of T9 present. T10 divided into two sclerites, each with some moderately strong, upwardly directed setae. Cerci oval, well separated. S10 separate from hypoproct, which is divided.

Distribution

Afrotropical Region except the equatorial rain-forest area. Also North Africa, Middle East, Iran, Pakistan, India, Sri Lanka, Further India (Burma, Thailand, Cambodia, Vietnam and continental Malaysia), Indonesia, the Philippines, and Taiwan. Also one undescribed species in south-western U.S.A.

Key to species of southern African *Phycus*

- 1 Abdomen entirely yellowish. All femora yellowish 2
- Abdomen, or at least the last segments, blackish. Femora at least partly darkened 3
- 2 Scape with dorsal setae (Fig. 5). First flagellomere (Fig. 5) partly yellowish. Palpi yellowish **fulvus** Lyneborg ♀
- Scape with only short pile dorsally (Fig. 4). First flagellomere (Fig. 4) entirely black. Palpi dark brown **flavus** Lyneborg ♂ ♀
- 3 Scape with strong setae both dorsally and ventrally (Figs 1–2). All femora uniformly blackish. Sparse pilosity present on upper sternopleuron 4
- Scape with ventral setae only (Fig. 3). Mid and hind femora distinctly paler than the blackish front femora. Pilosity absent from upper sternopleuron **mirabilis** Lyneborg ♂ ♀
- 4 Frontal callus separated from ocellar callus by a narrow strip of tomentum, and also well separated from eye-margin **niger** (Kröber) ♂ ♀
- Frontal callus broadly confluent with ocellar callus and broadly touching eye-margins **kroeberi** (Brauns) ♀

Notes on the species

Phycus niger (Kröber) is a widespread species in Namibia. For example, it occurred abundantly at Gobabeb in February 1974, appearing on dead and dying tree-trunks in riverine habitats at the Kuiseb river. New South African record: Cape Province, 2 ♂, Richtersveld, Numees Mine, 28°18'S, 16°58'E, 16–20. ii.1979, Malaise trap, Lamoral, Bampton, Barnley (NM).

Phycus kroeberi (Brauns) is closely related to *niger*, and is still only known from two female specimens collected at Willowmore in December 1913. The lectotype is deposited in the NM.

Phycus mirabilis Lyneborg was originally described and hitherto known only from Zimbabwe. New records of this handsome species are: BOTSWANA: 1♂, SE2226BD, Farmers Brigade 5 km SE of Serowe Hillside, 6.v.1984, mercury vapour lamp, P. Forchhammer (NM). SOUTH AFRICA: Natal, 4♂, Lebombo foothills, 2732AC, 5 km N Jozini, under fig tree, 28.viii.1982, B. Stuckenberg (NM & ZMC).

Phycus flavus Lyneborg is still known only from a male holotype and a female paratype from NE Transvaal. It is closely related to *mirabilis*, but with yellow abdomen and different genitalia.

Phycus fulvus Lyneborg is known from two female specimens from Namibia.

For descriptions and illustrations of these species, see Lyneborg (1978).

Genus *Stenogephyra* gen. n.

Etymology: *stenos* = narrow; *gephyra* = bridge.

Gender: feminine. Type species: *Stenogephyra torrida* sp. n., present designation.

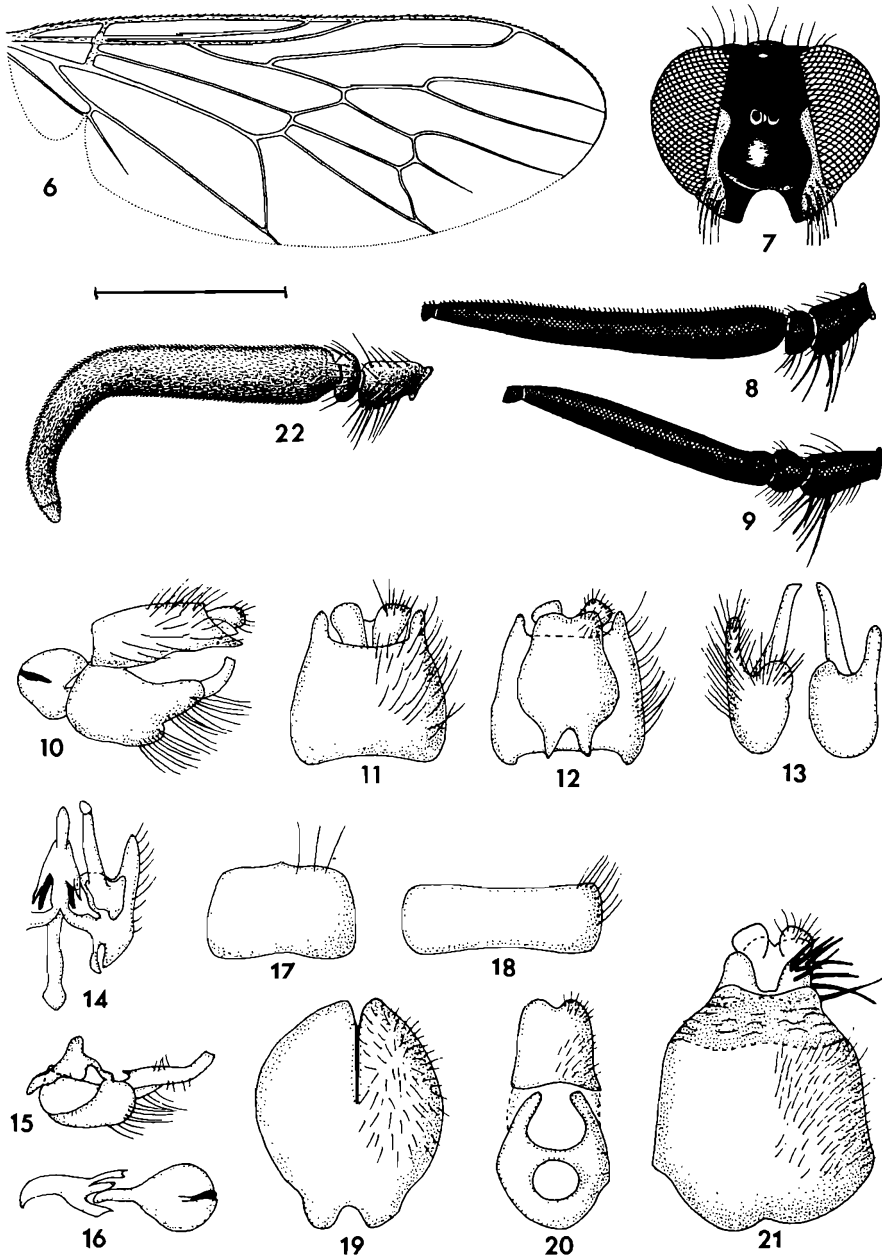
Diagnosis

Small, blackish, slender-bodied species. Eyes widely separated in both sexes, frons about 3 times as wide as ocellar tubercle and polished black (Fig. 7). Face strongly protruding, forming a polished black convex callus below antennae. Gena wide. Scape very short; first flagellomere 4—5 times as long as scape, longest in ♂. Flagellar style very minute, obviously one-segmented, the usual apical spine (cf. Figs 8–9) not discernible. Palpus two-segmented, apical segment longer than basal segment. Proboscis short.

Thoracic chaetation: 2–3 np, 1 sa, 1 pa, 0–1 dc, 1 sc. Mesonotal pile black and uniform. Prosternum bare. Pleura practically without any pile. Ambient vein terminating at vein M_1 . Vein M_2 usually abbreviated and not reaching wing-margin. Cell m_3 petiolate. Cell r_4 very slender, 4–6 times as long as wide at apex, veins R_4 and R_5 being nearly straight. Proximal end of discal cell pointed or closed by a very short, transverse cross-vein. Wings unpatterned. Mid coxa without pile on posterior surface. All femora without setae. Tibiae short, with few and short setae. Setae of mid and hind tarsi very short.

Abdomen short and wide, nearly cylindrical, in ♂ suddenly tapering from segment 5 onwards, in ♀ more gradually tapering. Dorsum shiny black with a short pile.

♂ terminalia (Figs 10–18). T8 (Fig. 18) and S8 (Fig. 17) of a simple rectangular shape. Also epandrium (Fig. 11) simple, without lateral projections. Ventral



Figs 6-22. *Stenogephyra* gen. n. 6-21. *S. torrida* sp. n. 6. Wing. 7. Male head in frontal view. 8. Male antenna. 9. Female antenna. 10-18. Male terminalia. 10. Male genitalia in lateral view. 11. Epandrium and cerci in dorsal view. 12. Epandrium, cerci and ventral epandrial sclerite in ventral view. 13. Gonocoxites with gonostyli in ventral view. 14. Left gonocoxite with gonostylus and aedeagal complex in interior view. 15. Right gonocoxite with gonostylus in interior view. 16. Aedeagus in lateral view. 17. Sternite 8. 18. Tergite 8. 19-21. Female terminalia. 19. Sternite 8. 20. Subgenital plate and vaginal apodeme. 21. Tergite 8, tergite 10 and cerci in dorsal view. 22. *S. minuta* sp. n., male antenna. Scale: 1 mm for 6 and 7, 0.5 mm for the rest.

epandrial sclerite (Fig. 12) as in *Phycus*, large, free, nearly as long as epandrium; not attached to aedeagus. Cerci wedge-shaped, short. Gonocoxites (Fig. 13) separated ventrally; no remnant of a hypandrium. Each gonocoxite with a narrow sclerotised bridge on inside (as in some *Xestomyzini*, see Lyneborg 1972), proximally to the insertion of the gonostylus. Dorsal apodeme of aedeagus connected to dorsal edge of gonocoxites via a sclerotised bridge. Distiphallus a short, rather wide, apically sharply pointed, tube (Fig. 16). Ventral apodeme very short and spoon-shaped. Ejaculatory apodeme with enlarged distal portion.

♀ terminalia (Figs 19–21). T8 (Fig. 21) large and squarish, its posterior margin not distinctly demarcated. T9 absent. T10 strongly constricted in mid-line, with 8–9 setae on each side. Cerci wedge-shaped as in ♂. S8 (Fig. 19) broadly spindle-shaped and uniformly pilose, posteriorly with a deep slit which continues into an infolded penial guide. Vaginal apodeme (Fig. 20) broadly ring-shaped anteriorly, while posterior portion is open and horseshoe-shaped. S9 absent. Subgenital plate squarish with a low incision into posterior margin.

Distribution

The genus will probably prove to be restricted in distribution to the western Cape Province and Namibia.

Relationship

Phycus and *Stenogephyra* form a monophyletic group. They share the following synapomorphic characters: (a) first flagellomere elongate; (b) femora without setae; (c) hypandrium vestigial or absent. A number of symplesiomorphic character states should also be mentioned. These are: (a) male eyes broadly separated; (b) palpus two-segmented; (c) prosternum bare; (d) ventral epandrial sclerite large. Autapomorphic characters for *Stenogephyra* are as follows: (a) face protruding; (b) flagellar style one-segmented and obviously without apical spine; (c) ambient vein terminating at M_1 .

Key to species of *Stenogephyra*

1. Vein M_2 usually abbreviated; its apex separated from wing-margin by a distance equal to width of discal cell (Fig. 6). Three pairs of notopleural setae. One pair of dorsocentral setae ***torrida* sp. n.**
- Vein M_2 usually complete to wing-margin. Two pairs of notopleural setae. Dorsocentral setae not distinct from the usual mesonotal pile . . . ***minuta* sp. n.**

***Stenogephyra torrida* sp. n.**

Figs 6–21

Etymology: dry, parched, hot, scorched. Refers to the arid places where this species is found.

Description, ♂.

Width of frons (Fig. 7) at level of anterior ocellus about 3 times distance between outer margins of upper ocelli. Head polished black, with a stripe of white-grey tomentum from above antennal bases along eye-margin to gena; also a tomentose stripe from upper occiput along postocular margin. Frons with some black hairs

below. Lateral parts of face and gena with black pile, which becomes whitish on lower occiput. Long, thin setae on postvertical area. Antenna as in Fig. 8; first flagellomere about 7 times as long as its maximal width; and about 5 times as long as scape. Flagellar style only about 5 per cent as long as first flagellomere. Mesonotum blackish and shiny, with two broad white-grey tomentose stripes; mesonotal pile short and black; $np = 3$, $sa = 1$, $pa = 1$, $dc = 1$, $sc = 1$. Pleura polished black, with following areas white-grey tomentose: propleuron, upper part of sternopleuron, and hypopleuron; pleural pile practically absent. Wings uniformly brownish hyaline; stigma distinct. Vein M_2 usually distinctly abbreviated. Knob of halter either entirely white-yellow, or with outer/upper convex side brown-black. Legs blackish, apical third to half of mid femur, and whole mid tibia, often brownish. Abdomen shiny black, with whitish hindmarginal hems on T1 and T2. Pale hairs on first segments, black on last segments. Terminalia as described for the genus (cf. Figs 10–18). Total length: 4.0–4.4 mm.

♀.

Very similar to ♂, but larger. First flagellomere shorter than in ♂ (Fig. 9), less than 4 times as long as scape. The main difference between the two sexes is to be found in the coloration of the legs: all coxae yellowish with thin white-grey tomentum; also femora yellowish, front femur often darkened dorsally at apex; front and hind tibiae and tarsi black; mid tibia and metatarsus yellowish, rest of tarsus black. Abdomen often brownish translucent laterally on some of the first segments, especially T2. Terminalia (Figs 19–21) as described for the genus. Total length: 4.8–5.1 mm.

Material examined: SOUTH AFRICA: *Cape Province*: 1♂ (holotype), 17 mi. N. Vanrhynsdorp at fork of Geelsbek & Sout Rivers, 3118Bc, 280 ft., 10.ix.1972, M. E. & B. J. Irwin (NM); 14♂ 11♀ (paratypes), same data as holotype (NM MEI ZMC); 2♂ 1♀ (paratypes), Knersvlakte, N. of Van Rhynsdorp, 6–9.x.1964, B. & P. Stuckenberg (NM); 1♂ 1♀ (paratypes), Bulhoek, Klaver-Clanw. Mus.-Exped., x.1950 (SAM); 1♂ (paratype), top of Botterkloof Pass, 3119Cd, 2230 ft., white sand dune assoc., 13.ix.1972, M. E. & B. J. Irwin (NM); 1♀ (paratype), Papendorp, at mouth of Olifants River, 3118Cc, coastal dunes, 11.ix.1972, M. E. Irwin (NM); 26♂ 3♀ (paratypes), 10 Mi. N. Pella, sandy bank of Orange River, 2819Cc, 940 ft., 4.ix.1972, M. E. Irwin (NM MEI ZMC).—NAMIBIA: 1♀ (paratype), Kuiseb, Namib, 9.v.1959, H. Dick Brown (BMNH); 18♂ 1♀ (paratypes), Namib Desert Park, Kuiseb River at Gobabeb, 2315Ca, riverine forest and sand, 12.ii.1974, M. E. & B. J. Irwin, L. Lyneborg (NM MEI ZMC); 38♂ 25♀ (paratypes), Gobabeb, Kuiseb River Bed, 25.i.-14.ii.1978, O. Lomholdt (ZMC BMNH); 1♀ (paratype), 5 km E. Swakopmund, 4.ii.1978, O. Lomholdt (ZMC); 1♂ (paratype), Swakop River Mouth, 4.ii.1978, O. Lomholdt (ZMC).

Distribution: Desert and poor steppe areas of western Cape Province and Namibia.

Remarks: All specimens from the Namib desert park area in the north of the range differ from specimens from the western Cape Province in that the halter knob is entirely white-yellow, and not brown-black on the outer/upper convex side. In other characters, including the male genitalia, the northern and southern populations are identical.

Stenogephyra minuta sp. n.

Fig. 22

Etymology: Refers to the very small size of this species; in fact one of the smallest therevids so far recorded.

Description, ♂.

Differs from ♂ of *torrida*, described above, as follows: overall smaller, total length 3,0–3,3 mm. Eyes lower, nearly circular in lateral view. Upper occiput polished black, white-grey tomentum consequently only present on lower section of postocular margin. Pile of head longer. Antenna (Fig. 22) with first flagellomere characteristically downcurved apically. Thorax coloured as in *torrida*, but pile longer, and with fewer setae, viz., np = 2, sa = 1, pa = 1, dc = 0 (but long hairs in the position), and sc = 1. Vein M₂ usually reaches wing-margin, but in one specimen it is slightly abbreviated in one wing only. Wings more hyaline, and halter entirely brown-black. Femora blackish, with rather thick white-grey tomentum and white pile. Tibiae and tarsi brown-black to black. Abdomen as in *torrida*, but pile longer. Male genitalia agreeing in all details with those of *torrida*, but ventral epandrial sclerite (cf. Fig. 12) is only one-third as wide as epandrium, and distiphallus (cf. Fig. 16) is slightly more slender.

♀.

As ♂, but frons wider, and first flagellomere shorter and narrower, but curved as in ♂. Legs coloured as in male, and thus very different from female of *torrida*, which has largely yellowish legs. Total length: 3,5–4,0 mm.

Material examined: *Cape Province:* ♂ (holotype), Karoo at junction of Calvinia-Sutherland Rd. nr. Inverdoorn Ceres, 33°12'S, 19°44'E, 2–3.x.1959, B. & P. Stuckenberg (NM); 4 ♂ 1 ♀ (paratypes), same data as holotype (NM ZMC); 1 ♀ (paratype), Uniondale district, x.1952, Mus. Exp. (SAM).

DEPOSITORIES AND ACKNOWLEDGEMENTS

Material is deposited in the following collections: British Museum (Natural History), London (BMNH); private collection of Dr Michael E. Irwin, Champaign, Illinois (MEI); Natal Museum, Pietermaritzburg (NM); South African Museum, Cape Town (SAM); Zoological Museum, Copenhagen (ZMC). The curators of these collections are kindly acknowledged for their assistance.

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